

XXXV.—*Characters of some apparently undescribed Ceylon Insects.* By F. WALKER.

[Continued from vol. iv. p. 376.]

## Fam. Eumenidæ.

ODYNERUS TINCTIPENNIS (Sect. *Ancistrocerus*, Wesm.). *Fœm.*

Niger, rude punctatus, capite lituris sex flavis, prothorace linea transversa interrupta testacea, mesothorace guttis quatuor laterali-bus flavis, metathorace linea transversa flava, abdomine fasciis duabus flavis, femoribus anterioribus flavo strigatis, alis nigrican-tibus.

*Female.* Black, roughly punctured. Head with a short yellow line behind each eye, and with a shorter yellow line in the notch of each eye; clypeus finely punctured, with a yellow spot on each side. Prothorax with a transverse testaceous line, which is at-tenuated and interrupted in the middle. Two yellow dots at the base of each fore-wing, the hind one divided. Metathorax with a short transverse yellow line. Abdomen finely punctured hind-ward; first and second segments with yellow hind borders. An-terior femora with a yellow apical stripe on the outer side. Wings blackish; veins and stigma black. Length of the body 5 lines; of the wings 8 lines.

ODYNERUS INTENDENS (Sect. *Ancistrocerus*, Wesm.) *Fœm.*

Niger, rude punctatus, capite punctis quatuor rufis, antennis subtus apiceque rufescentibus, scapo subtus flavo, abdomine fasciis dua-bus albidis, tibiis tarsisque subtus rufescentibus, tibiis anticis intus flavis, alis cinereis.

*Female.* Black, roughly punctured. Head with a red point behind each eye, and with another in the notch of each eye; a pale point between the antennæ, which are reddish beneath and at the tips; clypeus thinly punctured, with a curved transverse piceous line at its base. Scape yellow beneath. Abdomen smooth towards the tip; first and second segments with whitish hind borders. Tibiæ and tarsi beneath and knees reddish; fore tibiæ yellow on the inside. Wings cinereous; veins and stigma black; second submarginal areolet divided by an additional veinlet. Length of the body 4 lines; of the wings 6 lines.

## Fam. Crabronidæ.

STIGMUS CONGRUUS. *Fœm.*

Niger, elongatus, glaber, nitens, clypeo linea interrupta fulva, ore flavo, antennis piceis, scapo subtus fla-vescente, metathorace rude punctato, pedibus flavescentibus, femo-ribus tibiisque posticis nigris, femoribus anterioribus nigro fasciatis, alis vitreis.

*Female.* Black, elongate, smooth, shining. Head much broader than the thorax, impressed longitudinally, and with a slight keel between the eyes; clypeus with an interrupted tawny line in front; mouth yellow. Antennæ piceous, slender; scapus dull yellowish

beneath. Metathorax roughly punctured, with a longitudinal impressed line. Petiole long, slender. Legs yellowish; hind femora and hind tibiæ black; anterior femora with a black band. Wings quite vitreous; veins and stigma black. Length of the body  $3\frac{1}{2}$  lines; of the wings 4 lines.

Fam. Larridæ.

**LARRADA EXTENSA.** *Mas.* Nigra, argenteo pubescens, capite magno supra plano antice bicarinato, scutello minimo nitente, metathorace maximo sulcato bituberculato, abdomine fusiformi basi apiceque nitente, pedibus robustis, femoribus incrassatis, alis nigricantibus.

*Male.* Black, hardly shining, with silvery pubescence. Head much broader than the thorax, flat above, vertical and with two slight keels in front. Antennæ filiform, piceous at the very base. Scutellum shining, very small. Metathorax much developed, nearly vertical and with a slight furrow hindward; the ridge with two tubercles. Abdomen fusiform, shining at the base and at the tip, not longer than the thorax. Legs stout; femora incrassated. Wings blackish; veins and stigma black. Length of the body 4 lines; of the wings 5 lines.

Fam. Apidæ.

**ANDRENA EXAGENS.** *Fæm.* Nigra, scitissime punctata, cinereo pilosa, capite rude punctato, antennis subclavatis apice rufis corporis dimidio non longioribus, abdomine rufo elliptico segmentis tribus posticis nigris, genubus rufis, tarsis testaceis, alis subcinereis.

*Female.* Black, shining, very finely punctured, with cinereous hairs. Head roughly punctured, very pubescent in front, a little broader than the thorax. Antennæ subclavate, about half the length of the body, red at the tips. Abdomen red, elliptical, a little broader and longer than the thorax; last three segments black. Knees reddish; tarsi testaceous. Wings slightly cinereous; veins and stigma black. Length of the body 3 lines; of the wings 5 lines.

**NOMIA VINCTA.** *Fæm.* Nigra, opaca, lata, crassa, punctata, cinereo pubescens, ore testaceo basi nigro, antennis subclavatis capite non longioribus, abdomine elliptico nitente scitissime punctato fasciis tribus cinereo tomentosis, tarsis subtus pallidis, alis cinereis.

*Female.* Black, dull, broad, thick, very closely and minutely punctured, with cinereous pubescence. Mouth testaceous, black at the base. Antennæ subclavate, as long as the head. Abdomen elliptical, shining, very finely punctured, a little longer and broader than the thorax, with three bands of cinereous tomentum. Tarsi pale beneath. Wings cinereous; veins and stigma black; third submarginal areolet much less than twice the length of the second. Length of the body  $3\frac{1}{2}$  lines; of the wings 6 lines.

**TRIGONA PRÆTERITA.** *Fæm.* Nigra, brevis, lata, glabra, nitens, capite opaco subscabro sulcato, antennis testaceis filiformibus

apice acutis, thorace transverse sulcato, scuto utrinque excavato, abdomine basi subtusque testaceo, pedibus crassis, tarsis testaceis, femoribus posticis valde dentatis, alis cinereis.

*Female.* Black, short, broad, smooth, shining. Head dull, minutely scabrous, with a furrow between the eyes. Antennæ testaceous, filiform, with acute tips. Scutum excavated on each side hindward; a deep transverse impression between it and the scutellum. Abdomen testaceous at the base and beneath. Legs thick; tarsi testaceous; hind tibiæ much dilated. Wings cinereous; veins and stigma black. Length of the body  $2\frac{1}{2}$  lines; of the wings 4 lines.

#### Fam. Dorylidæ.

**ENICTUS PORIZONOIDES.** *Mas.* Fulvus, cylindricus, nitens, cinereo-pubescent, capite nigro, antennis thorace brevioribus, scapo dilatato, flagello lanceolato, abdomine sessili, pedibus brevissimis, alis cinereis amplis, venis piceis basi fulvis, stigmatibus nigro.

*Male.* Tawny, cylindrical, shining, with cinereous pubescence. Head black. Antennæ shorter than the thorax; scape dilated; flagellum lanceolate. Abdomen sessile, nearly twice the length of the thorax. Legs very short. Wings ample, cinereous; veins piceous, tawny towards the base; stigma black. Length of the body  $3\frac{1}{2}$  lines; of the wings 7 lines.

#### Fam. Ichneumonidæ.

**PIMPLA ALBOPICTA.** *Fæm.* Nigra, nitens, subtus rufa, capite albo, antennis albo fasciatis, scapo rufo, thorace lituris plurimis albis, abdomine cylindrico lineolis duabus fasciisque albis, oviductu brevi, pedibus rufis, coxis albo strigatis, tarsis posticis nigris, alis cinereis.

*Female.* Black, shining, red beneath. Head white, with a yellow stripe in front. Eyes with a concave border between the antennæ. Palpi white. Antennæ black, long, slender, with a white band before the middle; scape red. Thorax with several white marks. Abdomen cylindrical, narrower and much longer than the thorax; two little longitudinal white lines at the base; hind borders of the segments with white bands, which are testaceous in the middle. Oviduct less than half the length of the body. Legs red; a white mark on each coxa; hind tarsi black. Wings cinereous; veins and costa black; discal areolet irregularly tetragonal; exterior side less than half the length of the interior side. Length of the body 6 lines; of the wings 10 lines.

This species is erroneously named *Cryptus albopictus* in the list of Ceylon insects lately published in Sir E. Tennent's work on Ceylon.

**CRYPTUS? ONUSTUS.** *Fæm.* Niger, scite scabrosus, capite lineis duabus albis, antennis albo fasciatis, articulis basalibus longis paucis; scapo crasso, scutello albo, metathorace spinis duabus albis crassis, petiolo rufo, abdomine fusiformi scitissime punctato



albo unifasciato subtus lurido, pedibus rufis longis robustis, alis lurido-cinereis.

*Female.* Black, slightly shining, finely scabrous. Head with a white line on each side of the vertex. Antennæ long, with a white band at a little beyond the middle, between which and the scape there are four long joints, the first red at the base; scape thick. Scutellum white. Metathorax with two short stout white spines. Abdomen fusiform, very finely punctured, lurid beneath, white at the tip; petiole red, increasing in thickness hindward, with a white hind border; first segment with a white hind border. Legs red, long, stout. Wings lurid-cinereous; veins and stigma black; discal areolet small, tetragonal. Length of the body five lines; of the wings 8 lines.

This species may form a new genus.

**HEMITELES? VARIUS.** *Fœm.* Niger, capite gutta flava, antennis rufis basi flavis apices versus nigris, abdomine fusiformi macula dorsali flava, pedibus flavis, tibiis posticis piceo-fasciatis, alis albis nigro bifasciatis.

*Female.* Black, shining. Head with a yellow dot at the base of the antennæ; mouth yellow. Antennæ red, very slightly increasing in thickness from the base to the tips, yellow at the base, black towards the tips, nearly as long as the body. Abdomen fusiform, much longer than the thorax, with a large yellow spot near the base; sheaths of the ovipositor less than half the length of the body. Legs yellow; a black point on each fore trochanter; tips of hind femora and a broad band on the hind tibiæ piceous. Wings white; veins black, yellow at the base. Fore wings with two black bands, the exterior one much broader than the inner one. Length of the body 2 lines; of the wings 4 lines.

**PORIZON DOMINANS.** *Mas.* Niger, obscurus, confertissime punctatus, antennis basi rufis, metathorace subcarinato, abdomine rufo glabro nitente clavato, lituris lateralibus basique nigris, pedibus rufis, tibiis tarsisque posticis piceis, alis cinereis.

*Male.* Black, opaque, very minutely and thickly punctured. Antennæ little more than half the length of the body, red at the base. Metathorax with a slight middle keel. Abdomen red, clavate, smooth, shining, darker towards the tip, with minute black marks on each side, less than twice the length of the thorax; petiole long, black, slender. Legs red; hind tibiæ and hind tarsi piceous. Wings cinereous; veins and stigma black. Length of the body  $3\frac{1}{2}$  lines; of the wings  $4\frac{1}{2}$  lines.

#### Fam. Braconidæ.

**MICROGASTER** Sect. *Mas.* Corpus robustum, breve, latum. Caput subquadratum, thorace non latius. Antennæ robustæ, corpore paullo longiores, articulis plurimis coarctatis. Abdomen sessile,

lineare, thorace valde angustius paulo brevius. Pedes robusti, breves, femoribus tibiisque posticis dilatatis.

*Male.* Body robust, broad, short. Head subquadrate, as broad as the thorax. Antennæ stout, a little longer than the body, with less than twenty closely connected joints, which successively decrease in length. Abdomen sessile, linear, much narrower and a little shorter than the thorax. Legs stout, short; hind femora and hind tibiæ dilated. Wings moderately broad; discal areolet complete.

The following species was erroneously separated from *Microgaster*, and mentioned as forming a new genus (*Liganira*) in the list of Ceylon insects referred to above.

**MICROGASTER DETRACTUS.** *Mas.* Niger, obscurus, confertissime punctatus, antennis piceis basi rufescentibus, abdomine glabro, subtus albido, pedibus anterioribus testaceis, femoribus anterioribus basi piceis, alis cinereis, venis stigmatæque nigris.

*Male.* Black, opaque, very thickly and minutely punctured. Antennæ piceous, reddish towards the base. Abdomen smooth, shining, whitish beneath. Legs testaceous; anterior femora piceous towards the base; hind legs black; hind coxæ testaceous. Wings cinereous; veins and stigma black. Length of the body  $1\frac{3}{4}$  line; of the wings 4 lines.

**MICROGASTER RECUSANS.** *Fœm.* Niger, robustus, obscurus, confertissime punctatus, antennis validis corpore vix brevioribus, abdomine glabro compresso subtus basi albido, tibiis tarsisque anterioribus testaceis, femoribus tibiisque posticis subdilatatis, alis nigricantibus.

*Female.* Allied to *M. tibialis*. Black, robust, opaque, very thickly and finely punctured. Antennæ stout, almost as long as the body. Abdomen smooth, shining, much compressed, whitish beneath at the base, not longer than the thorax. Ovipositor shorter than the abdomen. Anterior tibiæ and tarsi and tips of anterior femora testaceous; hind femora and hind tibiæ slightly dilated; hind knees testaceous. Wings blackish; veins and stigma black; a whitish point at the inner end of the stigma. Length of the body  $1\frac{1}{2}$  line; of the wings 3 lines.

**MICROGASTER SIGNIFICANS.** *Mas.* Niger, obscurus, confertissime punctatus, antennis corpore longioribus, abdomine glabro angusto, tibiis tarsisque anterioribus testaceis, femoribus tibiisque posticis subdilatatis, tibiis posticis basi testaceis, alis venis stigmatæque albidis, vena costali extus nigra.

*Male.* Nearly allied to *M. xanthostigma*; antennæ rather longer and stouter. Black, opaque, very closely and finely punctured. Antennæ longer than the body. Abdomen smooth, shining, much narrower than the thorax. Anterior tibiæ and anterior tarsi and tips of anterior femora testaceous; hind femora and hind tibiæ slightly dilated; hind tibiæ testaceous towards the base. Wings, veins, and stigma whitish; costal vein exteriorly and veinlet along

the outer side of the stigma black. Length of the body  $1\frac{3}{4}$  line, of the wings  $3\frac{1}{2}$  lines.

**MICROGASTER SUBDUCTUS.** *Mas.* Niger, obscurus, confertissime punctatus, antennis gracilibus corpore non longioribus, abdomine glabro angusto, tibiis tarsisque anterioribus testaceis, femoribus tibiisque posticis subdilatatis, tibiis posterioribus basi testaceis, alis venisque albidis, vena costali extus nigra, stigmatè pallide lurido.

*Male.* Allied to *M. xanthostigma*. Black, opaque, very closely and finely punctured. Antennæ slender, as long as the body. Abdomen smooth, shining, narrower than the thorax. Fore tibiæ, fore tarsi, and tips of fore femora testaceous; posterior tibiæ testaceous towards the base; hind femora and hind tibiæ slightly dilated. Wings and veins whitish; costal vein black exteriorly; stigma pale lurid, bordered by piceous veinlets. Length of the body  $1\frac{1}{2}$  line; of the wings 3 lines.

**SPATHIUS BISIGNATUS.** *Mas.* Rufus, glaber, cylindricus, capite globoso, antennis pallide rufis apice nigris corpore non brevioribus, abdomine fusiformi, pedibus piceis, tarsis testaceis, alis anticis nigris perangustis albo quinque-notatis apice cinereis. *Fæm.* Niger, antennis corpore longioribus, abdomine clavato.

*Male.* Red, smooth, shining, cylindrical. Head globose. Antennæ pale red, filiform, slender, black towards the tips, as long as the body. Abdomen convex, fusiform, much longer than the thorax. Legs piceous; tarsi testaceous. Wings very narrow. Forewings black, with a white band near the base, and with four white dots, two on the costa, one in the interior part of the disk, and one on the hind border opposite the first on the costa; tips cinereous. Hind wings limpid. *Female.* Body black. Antennæ a little longer than the body. Abdomen clavate. Ovipositor as long as the abdomen. Length of the body  $2-2\frac{1}{4}$  lines; of the wings 3 lines.

This species in structure comes between *Spathius* and *Hecabolus*, differing slightly from both genera.

**SPATHIUS SIGNIPENNIS.** *Fæm.* Rufus, gracilis, scitissime punctatus, capite transverso pallide luteo, antennis pallide luteis corpore paulo longioribus apice nigris, abdomine piceo subclavato, oviductu brevi, pedibus pallidissime flavis, alis albidis, venis nigris, stigmatè flavo longissimo.

*Female.* Red, slender, hardly shining, very finely punctured. Head transverse, pale luteous. Antennæ pale luteous, slender, filiform, a little longer than the body, black towards the tips. Abdomen piceous, subclavate, pale beneath, a little longer than the thorax. Ovipositor less than half the length of the abdomen. Legs very pale yellow. Wings whitish. Fore wings moderately broad; veins black; veinlet between the subcostal and præbrachial veins very strongly marked; stigma yellow, very long. Length of the body  $1\frac{3}{4}$  line; of the wings 3 lines.

This species differs from the preceding one and from *Spathius*



and *Hecabolus* as much as the two latter genera differ from each other.

#### Genus HERATEMIS.

*Mas.* Corpus glabrum. Caput transversum, thorace latius. Palpi graciles, longiusculi. Antennæ graciles, filiformes, corpore vix duplo longiores. Thorax robustus. Abdomen sessile, lineare, depressum, angustum. Pedes longi, graciles.

*Male.* Nearly allied to *Cælinius*. Body smooth, shining. Head transverse, broader than the thorax. Palpi slender, rather long. Antennæ slender, filiform, almost twice the length of the body; joints elongate, numerous, closely joined together. Thorax robust; sutures of the parapsides strongly marked. Abdomen sessile, linear, depressed, a little longer and much narrower than the thorax. Legs long, slender. Wings moderately broad; fore wings like those of *Cælinius* in the structure of the veins.

**HERATEMIS FILOSA.** *Mas.* Rufa, capite nigro, antennis nigris basi pallide rufis, pedibus testaceis, tibiis tarsisque posticis nigris, alis nigricantibus, venis stigmatæque nigris.

*Male.* Red, paler beneath. Head black. Antennæ black, pale red at the base. Legs testaceous; hind tibiæ, hind tarsi, and tips of hind femora black. Wings blackish; veins and stigma black. Length of the body  $2\frac{1}{4}$  lines; of the wings  $4\frac{1}{2}$  lines.

#### Genus NEBARTHA.

*Mas.* Corpus gracile, elongatum, scitissime punctatum. Caput transversum, sat parvum. Palpi graciles, longiusculi. Antennæ filiformes, sat graciles, corpore breviores; articuli elongati. Thorax fusiformis. Abdomen fusiforme, subsessile, thorace vix longius. Pedes longi, graciles; postici robusti, longissimi.

*Male.* Allied to *Cælinius*. Body slender, elongate, slightly shining, very finely punctured. Head transverse, hardly as broad as the thorax. Palpi slender, rather long. Antennæ filiform, rather slender, shorter than the body; joints elongate. Thorax fusiform; metathorax well developed. Abdomen fusiform, subsessile, as broad as the thorax, but hardly longer. Legs long, slender; hind legs robust, very long. Wings moderately broad; structure of the veins hardly differing from that of *Cælinius*.

**NEBARTHA MACROPODIDES.** *Mas.* Fulva, capite gutta nigra, antennis piceis basi fulvis, thorace abdomineque nigro bivittatis, femoribus intermediis nigro fasciatis, femoribus posticis dimidio apicali nigro, alis obscure cinereis, venis nigris, stigmatæ pallide piceo.

*Male.* Tawny. Head with a black dot between the eyes. Antennæ piceous, tawny at the base. Thorax and abdomen with a black stripe along each side. Middle femora with a black band near the tips. Hind femora with the apical half black. Wings dark cinereous; veins black; stigma pale piceous. Length of the body  $2\frac{3}{4}$  lines; of the wings  $4\frac{1}{2}$  lines.

Genus PSYTTALIA.

*Fœm.* Corpus convexum, glabrum, latiusculum. Caput transversum, thorace non latius. Antennæ graciles, filiformes, corpore longiores; articuli breves. Scutum subcarinatum. Abdomen ellipticum, subsessile, thorace paulo longius non angustius. Oviductus brevis. Pedes breviusculi.

*Male.* Body convex, smooth, shining, rather short and broad. Head transverse, as broad as the thorax. Antennæ slender, filiform, longer than the body; joints short, numerous. Scutum with a slight keel. Abdomen elliptical, subsessile, as broad as the thorax and rather longer. Ovipositor shorter than the abdomen. Legs rather short. Fore wings rather broad; veins in structure somewhat resembling those of *Pygostolus*, to which genus the following species seems to be nearly allied.

PSYTTALIA TESTACEA. *Fœm.* Testacea, mandibulis apice nigris, antennis piceis, basi testaceis, oviductus vaginis nigris, alis cinereis, venis nigris, stigmatè pallide piceo.

*Female.* Testaceous. Mandibles with black tips. Antennæ piceous, testaceous at the base. Sheaths of the ovipositor black. Wings cinereous; veins black; stigma pale piceous. Length of the body 2 lines; of the wings 4 lines.

[To be continued.]

XXXVI.—*Reply to Mr. Jeffreys's Remarks on a "Note on the Comparative Size of Marine Mollusca in various Latitudes of the British Seas."* By ROBERT M'ANDREW, F.R.S., F.L.S.

MR. JEFFREYS, in the wish to substantiate his proposition that "in general, the size of specimens (of Mollusca) increases in a ratio inverse to their northern and converse to their southern points of latitude," having thought fit to contradict some of my statements, and endeavoured to throw discredit upon others, I feel called upon, very reluctantly (anything in the shape of controversy being opposed alike to my habit and inclination), to revert once more to the question, in order to show that such a proposition not only has not been proved, but is at variance with fact.

I cannot boast the advantage of having dredged in extreme northern or southern latitudes, my researches having been confined within about forty-two degrees of latitude, or some ten degrees north and twenty degrees south of the extreme limits of the British seas; but trust that my opportunities have been such as to make me competent to form an opinion upon the point at issue,—the conclusion I have come to regarding it being entirely the result of personal observation.